

## **AMENDMENTS TO THE CLAIMS**

The following listing of claims will replace all prior versions and listings of claims in the application.

### **LISTING OF CLAIMS**

1. (currently amended) A power production system, comprising:
  - a combustion oxidizer source to provide a selected volume of a combustion oxidizer;
  - a combustion fuel source to provide a selected volume of a combustion fuel;
  - a plurality of a combustor to combust the selected volume of the fuel and the oxidizer, wherein combusting the selected volume of the fuel and the oxidizer form expanding gases;
  - a ~~[[fan]]~~ turbine powered by the expanding gasses; and
  - an ignition system to provide substantially simultaneous ignition of each of the plurality of the combustors,
  - said ignition system including a combustion wave chamber to form a detonation wave that can be transmitted through an ignition line with at least one of a selected oxidizer and a selection fuel.

2. (currently amended) The power production system of Claim 1, wherein:

the plurality of the combustors each include a oxidizer pathway that provides a path to provide the oxidizer to main combustion chamber in each of the plurality of the combustors; and

~~wherein~~ the selected volume of the combustion fuel is mixed with the selected volume of the oxidizer flowing to the oxidizer pathway to be combusted in the main combustion chamber.

3. (original) The power production system of Claim 2, wherein said ignition system includes a pilot that is able to combust the selected volume of the combustion fuel in the selected volume of the combustion oxidizer.

4. (currently amended) The power production system of Claim 1, wherein:  
said ignition system includes a combustion wave chamber in which a selected volume of an ignition oxidizer in a selected volume of an ignition fuel is combusted; and

~~wherein~~ the combustion of the selected volume of the ignition oxidizer and the selected volume of the ignition fuel forms a detonation wave.

5. (original) The power production system of Claim 4, wherein said ignition system further includes an ignition line operable to transmit the detonation wave from the combustion wave chamber to each of the plurality of the combustors substantially simultaneously.

6. (currently amended) The power production system of Claim 1, wherein said ignition system includes an ignition line, ~~including~~ which includes a central tube to transmit the detonation wave, a first annulus to transmit ~~[[a]]~~ the selected ~~pilot~~ oxidizer and a second annulus to provide ~~[[a]]~~ the selected ~~pilot~~ fuel.

7. (currently amended) The power production system of Claim 1, wherein:  
said ignition system includes a combustion wave chamber, an ignition line,  
and a pilot port; and

~~wherein~~ said combustion wave chamber is operable to produce a  
combustion wave that is transmitted along the ignition line to the pilot port.

8. (currently amended) The power production system of Claim 1, further  
comprising an igniter to ignite a selected volume of an oxidizer and a fuel in the ignition  
system.

9. (currently amended) The power production system of Claim 8, wherein  
said ignition source includes a spark source.

10-16. (cancelled)

17. (currently amended) A method of igniting a plurality of pilots in a plurality  
of main combustion chambers, ~~wherein~~ each of said combustion chamber ~~[[is]]~~ being  
separated from each of the other main combustion chambers, the method comprising:

forming a detonation wave;  
transmitting the detonation wave to at least one of the main combustion chambers;  
at least one of providing and flowing a selected volume of a pilot oxidizer and a pilot fuel to the main combustion chamber; [[and]]  
igniting the selected volume of the pilot oxidizer and the pilot fuel;  
combusting a selected main fuel; and  
powering a turbine with the combusting main fuel.

18. (original) The method of Claim 17, wherein forming a detonation wave includes:

igniting a selected volume of an oxidizer and a fuel, wherein the ignition forms the detonation wave.

19. (original) The method of Claim 17, further comprising:  
forming a deflagration wave; and  
transmitting the deflagration wave along a selected length of a transmission line to convert said deflagration wave to the detonation wave.

20. (original) The method of Claim 18, wherein said oxidizer is molecular oxygen and said fuel is molecular hydrogen.

21. (original) The method of Claim 18, wherein igniting a selected volume of an oxidizer and the fuel includes spark igniting the selected volume of the oxidizer and the fuel at a selected time.

22. (original) The method of Claim 17, wherein transmitting the detonation wave to the at least one of the main combustion chambers includes transmitting the detonation wave to a plurality of the main combustion chambers substantially simultaneously.

23. (original) The method of Claim 22, wherein transmitting the detonation wave to a plurality of the main combustion chamber substantially simultaneously ignites a plurality of pilots substantially simultaneously.

24. (original) The method of Claim 23, wherein each of the plurality of the pilots combust the selected main fuel substantially simultaneously in the plurality of the main combustion chambers.

25. (new) A power production system, comprising:  
a combustion oxidizer source to provide a selected volume of a combustion oxidizer;  
a combustion fuel source to provide a selected volume of a combustion fuel;

a plurality of a combustor to combust the selected volume of the fuel and the oxidizer, wherein combusting the selected volume of the fuel and the oxidizer form expanding gases;

a turbine powered by the expanding gasses; and

an ignition system to provide substantially simultaneous ignition of each of the plurality of the combustors,

wherein said ignition system includes an ignition line, which includes a central tube to transmit the detonation wave, a first annulus to transmit a selected pilot oxidizer and a second annulus to provide a selected pilot fuel.